In the Claims:

Please amend the claims as follows:

Please add new claims 111-147.

1. (Currently Amended) A feeding ~~set~~ system comprising:

an infusion set comprising tubing configured for carrying a fluid, the tubing forming at least an inflow line, an outflow line, and a central pump engaging portion;

a first connector configured for attachment to ~~an~~ the inflow line of ~~an~~ the infusion set and ~~a~~ the central pump engaging portion of ~~an~~ the infusion set;

a second connector configured for attachment to ~~an~~ the outflow line of ~~an~~ the infusion set and the central pump engaging portion of the infusion set;

~~an infusion set comprising tubing configured for carrying a fluid and being attached to the first connector and the second connector, the tubing forming at least an inflow line and an outflow line; and~~

an anti-freeflow mechanism disposed ~~in communication with the one of the first connector and the second connector, the anti-freeflow mechanism being disposed~~ inside the central pump engaging portion of the tubing; and

an optical pressure sensor disposed in optical communication with the infusion set.

2. (Currently Amended) A feeding ~~set~~ system according to claim 1, wherein the anti-freeflow mechanism is attached to and spaced apart at a predetermined distance from one of the first connector and the second connector.

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3. (Currently Amended) A feeding ~~set~~ system according to claim 1, wherein the anti-freeflow mechanism comprises a generally ball-shaped member configured for disposition in the tubing of ~~an~~ the infusion set.

4. (Currently Amended) A feeding ~~set~~ system according to claim 3, wherein the ball-shaped member is attached to one of the first connector and the second connector and continually spaced away from the connector to which the ball-shaped member is attached so that a flow channel may be formed around the ball-shaped member and into the connector to which the ball-shaped member is attached.

5. (Currently Amended) The feeding ~~set~~ system according to claim 1 wherein the ~~infusion set comprise a~~ central pump engaging portion extends ~~extending~~ between the first connector and the second connector.

6. (Currently Amended) The feeding ~~set~~ system according to claim 5, wherein the anti-freeflow mechanism is disposed in one of the inflow line, pump engaging portion and outflow line.

7. (Currently Amended) The feeding system ~~solution delivery system~~ according to claim 6, wherein the anti-freeflow mechanism is attached to the second connector and disposed in the central pump engaging portion of the infusion set.

8. (Currently Amended) The feeding system ~~solution delivery system~~ according to claim 7, wherein the outside diameter of the anti-freeflow mechanism is slightly larger than the inside diameter of the pump engaging portion of the infusion set.

9. (Currently Amended) The feeding system ~~solution delivery system~~ according to claim 5, wherein the anti-freeflow mechanism is a generally ball-shaped member.

10. (Currently Amended) The feeding ~~set~~ system according to claim 1 ~~5~~, wherein the ~~pump engaging portion~~ optical pressure sensor comprises an optical emitter and an optical detector disposed adjacent the central pump engaging portion of the feeding set ~~at least one monitoring portion~~ for optically monitoring pressure within the infusion set.

11. (Currently Amended) The ~~A solution delivery system having a void therein configured for receiving a~~ feeding ~~set~~ system according to claim 1~~0~~, wherein the central pump engaging portion comprises ~~comprising~~ at least one protrusion ~~abutment member for engaging the feeding set~~ configured to minimize movement of the central pump engaging ~~monitoring~~ portion when the pump engaging portion is worked by a pumping mechanism.

12. (Withdrawn) A solution delivery system comprising a void configured for receiving a portion of a feeding set and an optical sensor disposed adjacent to feeding set, the optical sensor being configured for determining pressure in the feeding set when a feeding set is disposed in the void.

13. (Withdrawn) The solution delivery system according to claim 12, further comprising a feeding set having a monitoring portion, and wherein the optical sensor comprises an optical signal emitter and an optical signal detector, and wherein the solution delivery system is configured so that at least a portion of the monitoring portion is disposed between the optical signal emitter and the optical signal detector.

14. (Withdrawn) The solution delivery system according to claim 13, wherein the monitoring portion is disposed between the optical signal emitter and the optical signal detector, so that it always occludes some light flow between the optical signal emitter and the optical signal detector.

15. (Withdrawn) The solution delivery system according to claim 13, wherein the monitoring portion is disposed between the optical signal emitter and the optical signal detector, so that it always allows some light flow between the optical signal emitter and the optical signal detector.

16. (Currently Amended) ~~The solution delivery system according to claim 11, wherein the feeding set adaptor has at least one tube engaging member~~ A solution delivery system comprising:

a feeding set comprising:

an infusion set comprising tubing configured for carrying a fluid and being attached to a first connector and a second connector, the tubing forming at least an inflow line, an outflow line, and a central pump engaging portion, the central pump engaging portion

extending between the first connector and the second connector and wherein the central pump engaging portion comprises at least one monitoring portion for optically monitoring pressure within the infusion set and at least one abutment member configured for minimizing movement of the monitoring portion when the pump engaging portion is worked by a pumping mechanism;

a first connector configured for attachment to the inflow line of an infusion set and the central pump engaging portion of the infusion set;

a second connector configured for attachment to the outflow line of an infusion set and the central pump engaging portion of the infusion set;

an anti-freeflow mechanism disposed in communication with the one of the first connector and the second connector, the anti-freeflow mechanism being disposed inside the tubing; and

a void disposed in the solution delivery system and configured for receiving the feeding set, the void comprising at least one tube engagement member, and wherein the abutment member of the pump engaging portion engages the tube engagement member of the solution delivery system ~~feeding set adaptor~~ to thereby limit movement of the pump engagement portion.

17. (Original) The solution delivery system according to claim 16, wherein the at least one tube engaging member defines a recess, and wherein the abutment member comprises a collar configured for resting in the recess.

18. (Original) The solution delivery system according to claim 16, wherein the at least one tube engagement member comprises a first tube engagement member and a second tube

engagement member disposed adjacent to each other with the monitoring portion extending therebetween.

19. (Original) The solution delivery system according to claim 18, wherein the pump engagement portion has a first abutment member disposed to engage the first tube engaging member and a second abutment member disposed to engage the second tube engaging member, the two abutment members being spaced apart and a distance therebetween constituting the monitoring portion of the pump engaging portion of the infusion set.

20. (Original) The solution delivery system according to claim 18, wherein the at least one tube engagement member further comprises a third tube engagement member and a fourth tube engagement member disposed adjacent to each other, and the pump engaging portion of the infusion set forming a second monitoring portion extending between the third tube engagement member and the fourth tube engagment member.

21. (Original) The solution delivery system according to claim 16, wherein the at least one tube engaging member and the at least one monitoring portion comprise a first monitoring portion and at least one tube engagement configured for disposition upstream from a pump rotor, and a second monitoring portion and at least one tube engagement member configured for disposition downstream from a pump rotor.

22. (Currently Amended) A feeding set ~~adaptor~~ comprising:

an infusion set comprising tubing for carrying a liquid, the tubing comprising an inflow line, and outflow line, and a central pump engaging portion, and wherein the central pump engaging portion is formed with at least one protrusion configured for inhibiting movement of at least one portion of the central pump engaging portion when the central pump engaging portion is worked by a pump;

~~a first~~ at least one connector configured for attaching two lines of ~~a~~ the feeding set,

an anti-freeflow mechanism disposed inside of the tubing of the infusion set; ~~in communication with the first connector;~~ and

a sample cell formed as part of the at least one ~~first~~ connector and configured for detecting bubbles.

23. (Currently Amended) The feeding set ~~adaptor~~ according to claim 22, wherein the sample cell has a pair of side walls disposed at an angle between about 45 and 100 degrees from one another.

24. (Currently Amended) The feeding set ~~adaptor~~ according to claim 23, wherein the sample cell defines a conduit having at least two sides which are disposed at an angle of about 50 to 60 degrees from one another.

25. (Currently Amended) The feeding set ~~adaptor~~ according to claim 24, wherein the conduit has a cross-section which is an equilateral triangle.

26. (Currently Amended) The feeding set ~~adaptor~~ according to claim 22 ~~25~~, wherein the conduit is configured such that a light beam entering an empty sample cell exits substantially parallel to the entering light beam, and a light beam entering a sample cell which is full of a liquid does not exit parallel to the entering beam. ~~has a cross-section which is an inverted equilateral triangle, the sides extending downwardly and inwardly.~~

27. (Currently Amended) The feeding set ~~adaptor~~ according to claim 22 ~~24~~, wherein the conduit is configured such that a light beam entering a sample cell which is full of a liquid exits in a first direction, a light beam entering an empty sample cell exits in a second direction, and a light beam entering a conduit which is either partially full of a liquid or full of a liquid which contains bubbles therein exits in a third direction. ~~has a cross-section which is diamond shaped.~~

28. (Currently Amended) The feeding set ~~adaptor~~ according to claim 22, wherein the sample cell has a~~n~~ pair of outer walls which extend ~~extends~~ towards a point, and a generally linear base extending outwardly from the point and disposed to allow light to flow through the base with minimal refraction.

29. (Currently Amended) A solution delivery system comprising the feeding set ~~adaptor~~ according to claim 22, and further comprising a housing disposed adjacent to the sample cell.

30. (Original) The solution delivery system according to claim 29, wherein the housing is spaced apart from the sample cell so as to form an air chamber between the housing and the sample cell.

31. (Original) The solution delivery system according to claim 29, wherein the housing has a pair of sidewalls which are disposed at an angle of between about 45 and 100 degrees from one another.

32. (Original) The solution delivery system according to claim 31, wherein the housing further comprises a base disposed at an angle of about 50 to 60 degrees from each of the sidewalls.

33. (Currently Amended) A solution delivery system comprising the feeding set ~~adaptor~~ according to claim 22, and further comprising a optical sensor disposed to project light into the sample cell.

34. (Original) The solution delivery system according to claim 33, wherein the optical sensor comprises an optical signal emitter and an optical signal detector, and wherein the sample cell is disposed between the optical signal emitter and the optical signal detector.

35. (Original) The solution delivery system according to claim 33, wherein the sample cell is configured to direct more light emitted from the optical signal emitter to the optical signal detector when the sample cell is at least partially filled with air.

Claims 36-90 (Canceled)

91. (Withdrawn) A method for monitoring pressure in an infusion set, the method comprising:

selecting a feeding set adaptor having a pump engaging portion of an infusion set disposed thereon and defining a monitoring portion; and

disposing the monitoring portion in an optical sensor to detect pressure changes in the monitoring portion by changes in the diameter of the monitoring portion.

92. (Currently Amended) A method for preventing freeflow in an infusion set, the method comprising:

selecting a feeding set ~~adaptor~~ having a pump engaging portion, ~~of an infusion set disposed thereon~~ the feeding set ~~and defining~~ further comprising a connector, a monitoring portion and an anti-freeflow mechanism configured to selectively stop fluid flow through the infusion set; and

disposing the anti-freeflow mechanism in the pump engaging portion of the feeding ~~infusion~~ set at a fixed distance from the connector to selectively preclude fluid flow therethrough.

93. (Currently Amended) A method for detecting air bubbles passing through an infusion set, the method comprising;

selecting a feeding set ~~adaptor~~ formed of tubing and consisting of at least an inflow line, and outflow line, and a pump engaging portion, and having a sample cell formed thereon and having at least one protrusion formed on the pump engaging portion for limiting movement of

the pump engaging portion when worked upon by a pump; ~~having a pump engaging portion attached thereto;~~

passing solution through the sample cell; and

disposing the sample cell in an optical signal such that light is refracted differently when air is present in the sample cell than when solution is present in the sample cell to thereby determine the presence of air.

94. (Original) The method according to claim 93, wherein the method comprises emitting the light in a plane and positioning the sample cell so that a sidewall of the sample cell is at an angle less than normal to the plane.

95. (Currently Amended) The feeding set adaptor of claim 22, wherein the anti-free flow mechanism is configured for disposition in ~~one of the two lines of an~~ the pump engaging portion of the infusion set.

96. (Currently Amended) The feeding set adaptor of claim 22, wherein the sample cell is formed integrally with one of the at least one ~~first~~ connector and is generally rigid.

97. (Withdrawn) The method according to claim 91, wherein the method comprises disposing the monitoring portion between an optical emitter and an optical detector to measure changes in the size of the tube.

98. (Withdrawn) The method according to claim 97, wherein the method comprises disposing the monitoring portion between the optical emitter and the optical detector, so that the monitoring portion always obstructs some light flow between the optical emitter and the optical detector when the pressure within the infusion set is within a normal range.

99. (Withdrawn) The method according to claim 97, wherein the method comprises disposing the monitoring portion between the optical emitter and the optical detector, so that the monitoring portion always allows some light to pass unobstructed between the optical emitter and the optical detector when the pressure within the infusion set is within a normal range.

100. (Withdrawn) The method according to claim 97, wherein the method further comprises limiting the radial expansion of the monitoring portion in at least one dimension, so as to exaggerate radial expansion of the monitoring portion in another dimension.

101. (Withdrawn) The method according to claim 100, wherein the method comprises placing an abutment member against the infusion set along the monitoring portion.

102. (Withdrawn) The method according to claim 100, wherein the method comprises placing a jacket around part of the infusion set along the monitoring portion.

103. (Withdrawn) The method according to claim 97, wherein the method comprises triggering an alarm in response to undesired expansion of the monitoring portion of the infusion set.

104. (Previously Added) The method according to claim 93, wherein the method comprises passing the solution through a sample sell which has a triangular cross-section.

105. (Previously Added) The method according to claim 93, wherein the method comprises passing light through a portion of the sample cell having walls which are disposed at an angle of between about 47 and 70 degrees so as to refract said light.

106. (Previously Added) The method according to claim 93, wherein the method further comprises passing a quantity of light through the sample so that said quantity of light is not refracted or reflected by the contents of the sample cell.

107. (Currently Amended) A method for forming a feeding set, the method comprising:

selecting an infusion set having an inflow line and an outflow line;

connecting the inflow line to a first connector and the outflow line to a second connector; ~~and~~

disposing at least one protrusion on the tubing of the infusion set, the at least one protrusion being configured for inhibiting movement of at least one portion of the infusion set when the infusion set is worked upon by a pump; and

disposing a flow restricting device inside the infusion set.

108. (Previously Added) The method according to claim 107, wherein the method comprises selecting at least one of the first connector and the second connector with a flow

restricting device formed integrally therewith, so as to selectively prevent flow in the infusion set when the flow restricting device is disposed therein.

109. (Currently Amended) A method for forming a feeding set, the method comprising:

selecting an infusion set having an inflow line and an outflow line; and

connecting the inflow line to a first connector and the outflow line to a second connector, wherein at least one of the first connector and the second connector has a sample cell disposed therein for monitoring the presence of air bubbles passing through the infusion line, the sample cell comprising a rigid conduit having two non parallel side walls; and

disposing the sample cell between an optical emitter and an optical detector such that the optical detector receives a first amount of light from the optical emitter when the sample cell is properly disposed between the optical emitter and optical detector, a second amount of light greater than the first amount of light when the sample cell is properly disposed between the emitter and detector and a either a bubble is present in the sample cell or the sample cell is empty, and a third amount of light greater than the second amount of light when the sample cell is not properly disposed between the optical emitter and optical detector.

110. (Currently Amended) A method for forming a feeding set, the method comprising:

selecting an infusion set having a pump engaging portion, an inflow line and an outflow line; and

connecting the inflow line and one end of the pump engaging portion to a first connector and the outflow line and the other end of the pump engaging portion to a second connector;;

~~wherein at least one of the first connector and the second connector has an abutment member attached thereto for limiting radial expansion of the infusion set.~~

disposing an occluder inside the tubing of the infusion set;

disposing a bubble detector in the feeding set, the bubble detector configured for placement between an optical emitter and an optical receiver such that a portion of the light emitted by the emitter reaches the receiver when the bubble detector is placed between the emitter and receiver and filled with a fluid, and where a greater portion of the light emitted by the emitter reaches the receiver when a bubble is present in the bubble detector; and

wherein a portion of the pump engaging portion is configured for placement between an optical emitter and an optical receiver such that increases in fluid pressure within the infusion set cause an increase in the diameter of the portion of the pump engaging portion sufficient to cause a reduction in the amount of light emitted by the emitter which reaches the receiver.

111. (New) The feeding set according to claim 1, wherein the optical pressure sensor comprises an optical emitter disposed on one side of a section of the central pump engaging portion and an optical detector disposed on the opposite side of the section of the central pump engaging portion such that the central pump engaging portion of tubing partially obstructs the flow of light from the emitter to the detector.

112. (New) The feeding set according to claim 111, wherein the section of the central pump engaging portion adjacent the optical emitter and optical detector is sufficiently elastic to expand somewhat in response to changes in pressure within the tubing and thereby change the amount of light emitted from the emitter which strikes the detector.

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113. (New) The feeding set according to claim 11, wherein the at least one protrusion comprises at least one annular ridge formed on the central pump engaging portion.

114. (New) The feeding set according to claim 1, further comprising an optical bubble detector.

115. (New) The feeding set according to claim 114, wherein the optical bubble detector comprises a triangular conduit formed from a transparent material, an optical emitter disposed adjacent one side of the conduit, and an optical emitter disposed along the opposite side of the conduit such that light emitted from the emitter passes through the conduit and is received by the detector, and such that the presence of an air bubble in the conduit changes the amount of light received by the detector.

116. (New) The feeding set according to claim 115, wherein the triangular conduit further comprises a portion having substantially parallel outer walls such that light passing through the portion of the conduit is not substantially refracted, thus allowing a portion of the light emitted from the emitter to be received by the detector regardless of the presence or absence of a bubble in the conduit.

117. (New) The method of claim 92, wherein the method further comprises selecting an anti-freeflow mechanism which is attached to one of the at least one connector.

118. (New) The method of claim 92, wherein the method further comprises selecting an anti-freeflow mechanism which allows flow past the anti-freeflow mechanism when a predetermined pressure is generated by a pump.

119. (New) The method of claim 92, wherein the method further comprises selecting an anti-freeflow mechanism which allows flow past the anti-freeflow mechanism when the tubing in which the mechanism is disposed is expanded radially.

120. (New) The method of claim 92, wherein the method further comprises disposing an optical bubble detector in the feeding set.

121. (New) The method of claim 120, wherein the method further comprises selecting a optical bubble detector with an optical emitter and an optical receiver spaced apart from each other, and wherein the optical bubble detector allows a first amount of light to reach the optical receiver when the detector is not placed between the emitter and the receiver, a second amount of light less than the first amount of light to reach the optical receiver when the detector is placed between the emitter and the receiver but a bubble is present in the detector, and a third amount of light which is less than the second amount of light to reach the optical receiver when the detector is placed between the emitter and the receiver and the detector is filled with a liquid.

122. (New) The method of claim 120, wherein the method further comprises selecting an optical bubble detector which comprises a conduit with a triangular cross section.

123. (New) The method of claim 120, wherein the method further comprises selecting an optical bubble detector which comprises a conduit with a generally triangular cross section having a base portion extending from one edge of the conduit, the base portion having parallel side walls and being configured to transmit a light beam without refracting the light beam.

124. (New) The method of claim 93, wherein the at least one protrusion comprises at least one annular ridge.

125. (New) The method of claim 93, wherein the method further comprises selecting a sample cell which further comprises an optical emitter and an optical detector.

126. (New) The method of claim 125, wherein the method further comprises disposing the sample cell between the optical emitter and the optical detector.

127. (New) The method of claim 125, wherein the method further comprises selecting a sample cell which directs more light towards the optical detector when a bubble is present in the cell.

128. (New) The method of claim 125, wherein the method further comprises selecting a sample cell which directs some light towards the optical detector regardless of the contents of the sample cell.

129. (New) The method of claim 93, wherein the method further comprises disposing an occluder in the feeding set tubing.

130. (New) The method of claim 129, wherein the occluder further comprises a connector.

131. (New) The method of claim 129, wherein the occluder prevents flow in the feeding set tubing until a pump generates a predetermined pressure within the feeding set.

132. (New) The method of claim 107, wherein the method further comprises selecting a flow restriction device which occludes the lumen of the infusion set tubing, thereby requiring expansion of the tubing to allow flow around the flow restriction device.

133. (New) The method of claim 107, wherein the method further comprises disposing an optical pressure sensor in the infusion set.

134. (New) The method of claim 133, wherein the method further comprises disposing a portion of the infusion set tubing between an optical emitter and an optical detector.

135. (New) The method of claim 134, wherein the method further comprises disposing at least one retaining wall adjacent the portion of the infusion set to thereby limit expansion of the portion of the infusion set caused by increased pressure within the infusion set.

136. (New) The method of claim 134, wherein the optical detector receives less light from the optical emitter when the portion of the infusion set tubing expands due to increased pressure within the infusion set.

137. (New) The method of claim 134, wherein the method further comprises selecting an infusion set wherein the portion of the infusion set disposed between the optical emitter and the optical detector has a wall thickness which is thinner that the wall thickness of adjacent sections of the infusion set.

138. (New) The method of claim 107, wherein the at least one protrusion comprises at least one flange disposed on the tubing.

139. (New) The method of claim 107, wherein the method further comprises disposing an optical bubble detector in the infusion set.

140. (New) The method of claim 139, wherein the optical bubble detector comprises a sample cell and an optical emitter and an optical receiver.

141. (New) The method of claim 140, wherein the optical receiver receives a first amount of light from the optical emitter when the sample cell is not disposed between the optical emitter and the optical detector, a second amount of light less than the first amount of light when the sample cell is disposed between the optical emitter and the optical detector and the sample cell is empty or a bubble is present in the sample cell, and a third amount of light less than the

second amount of light when then sample cell is disposed between the optical emitter and the optical detector and the sample cell is filled with a liquid.

142. (New) The method of claim 140, wherein the sample cell comprises a triangular cross-section.

143. (New) The method of claim 142, wherein the sample cell further comprises a base portion disposed along an edge of the sample cell and extending outwardly from the sample cell, the base portion having parallel side walls such that a beam of light will pass through the base portion with minimal refraction.

144. (New) The method of claim 109, wherein the method further comprises disposing an anti-freeflow occluder in the tubing at a fixed distance relative to one of the first and second connectors, the occluder comprising a solid head portion attached to a connector by a stem portion, the stem portion creating a conduit within the tubing for fluid flow, and the head portion contacting the inner wall of the tubing sufficiently to prevent flow past the head portion until sufficient pressure is generated to expand the tubing somewhat.

145. (New) The method of claim 109, wherein the method further comprises a pressure sensing portion of the infusion set configured for placement between an optical emitter and an optical detector such that increases in pressure within the tubing increase the diameter of the tubing sufficient to reduce the amount of light transmitted to the optical detector from the optical emitter.

146. (New) The feeding system according to claim 1, wherein the optical sensor monitors pressure at a point along the central pump engaging portion.

147. (New) An infusion set tube, the tube being configured for insertion into a pump and for being connected to an inflow line and an outflow line by an inflow connector and an outflow connector, the infusion set tube comprising:

a length of resilient tubing; and

a plurality of flanges formed integrally with the tubing, the flanges being spaced so as to form at least one monitoring portion and a pump portion wherein the flanges are configured for insertion into corresponding recesses in a pump housing or pump cartridge to thereby inhibit movement of the at least one monitoring portion, and wherein the pump portion is configured for being worked upon by a pump,